DOCUMENT RESUME

ED 270 633 CE 044 593

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TITLE Using CODAP Job Analysis for the Development of Integrated Training Requirements for Three Army Civilian Career Fields.
PUB DATE 17 Apr 86
NOTE 12p.; Paper presented at the Annual Meeting of the American Educational Research Association (70th, San Francisco, CA, April 16-20, 1986).
PUB TYPE Reports - Descriptive (141) -- Speeches/Conference Papers (150)

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS Employment Qualifications; *Government Employees; *Job Analysis; Job Skills; Job Training; *Military Training; *Occupational Information; Postsecondary Education; Program Improvement; *Training Methods
IDENTIFIERS *Army; *Comprehensive Occupational Data Analysis Programs

ABSTRACT

A multiuse Comprehensive Occupational Data Analysis Program (CODAP) job analysis is being used to develop training requirements and selection criteria for three interrelated Army civilian logistics career fields. Individual job task lists for the 20 job series within the three career programs were developed. The lists were based on a review of 2,000 position descriptions. After job descriptions are generated for each job series, final job tasks for each series can be delineated, tasks rated for training purposes, and final training activities linked to job tasks. This process consists of five steps: (1) identify core and supplemental tasks; (2) review and rate core and supplemental tasks; (3) specify knowledges and abilities to be rated; (4) rate the knowledges and abilities against the various criteria specified; (5) link the knowledge or ability to tasks. This analysis should provide data for defending job training requests and for building a stronger and more logical Army civilian training structure. (KC)

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USING CODAP JOB ANALYSIS FOR THE DEVELOPMENT OF INTEGRATED TRAINING REQUIREMENTS FOR THREE ARMY CIVILIAN CAREER FIELDS

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CE044593

A paper presented at the 1986 Annual Meeting of the American Educational Research Association (AERA), San Francisco, California, April 17, 1986.

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Purpose

The purpose of this paper is to share with the audience, how a multiuse CODAP job analysis is being used to develop training requirements and selection criteria for three interrelated Army civilian logistics career fields. The paper will describe the current Army civilian promotion and training process and how these new procedures are being used to provide vital information to those who must design a legally defensible referral and promotion system along with a training process that dovetails the more structured training of enlisted personnel and officers.

Theoretical Framework

The Army is in the process of implementing two major civilian personnel programs focusing on a centralized and automated referral and promotion program and a more structured and sequential training planning and delivery system. The Army Civilian Career Evaluation System of (ACCES) is the result of a joint effort between the U.S. Army Civilian Personnel Center (CIVPERCEN) and the U.S. Office of Personnel Management (OPM) to improve the current civilian promotion and referral system, known as the SKAP system. ACCES requires a rigorous task analysis effort so that the job tasks required can be quantitatively specified. Once the necessary tasks to perform the job are identified, appropriate knowledges, skills, and abilities (KSAs) can be specified for promotion and referral purposes. ACCES will be the Army's future centralized evaluation and referral system and has thus far been implemented in two civilian career programs--Manpower and Force Management and Civilian Personnel Administration. The current job analysis looks at the problems of developing selection criteria and training requirements in three other career programs within a single effort.

The second purpose for which this job analysis was conducted is the newly developed Army Civilian Training, Education and Development System (ACTEDS). ACTEDS is targeted toward improving the development of the Army's

civilian work force through systematic technical, professional, and managerial training and development. The Army recognizes that ACTEDS is needed because:

> As presently designed, the civilian training and development system does not fully support the progressive development of Army's future top civilian managers. Contrary to the desired orderly, systematic approach to technical, professional, and managerial skills training, civilian employees typically participate in programs on a self-initiated rather than management planned basis. In most instances, the training and assignments they receive are not sequentially interrelated to contribute to progressively increasing and strengthening the experience and knowledge base over their entire career.

One of the first civilian career programs in which ACTEDS is being implemented is the Logistics and Acquisition Management Program (LOGAMP) consisting of all GS/GM 11-15 managers in six selected Army career programs: Contracting and Acquisition; Quality and Reliability Assurance; Engineers and Scientists; Material Maintenance Management; Supply Management; and Transportation Management. (The last three career programs noted are being analyzed in this study.) The method for developing ACTEDS training requirements, as well as selection criteria for promotion within the ACCES program, is through a CODAP-based job task analysis inventory followed by subject matter expert (SME) workshops wherein KSAs are developed both for training requirements and for setting selection criteria.

Method

Since September 1984, the Personnel Decisions Research Institute (PDRI), joined by the Human Resources Research Organization (HumRRO), has been conducting a CODAP-based job analysis for the Army Civilian Personnel Center (CIVPERCEN). Individual job task and KSA lists for the 20 job series within the three career programs were initially developed. The lists were based on a review of 2,000 position descriptions (out of 10,000 job incumbents). Using the review of current classification and qualification standards for each series as well as the initial inventories as a starting point, a sample of nearly 400 incumbents was interviewed in small group meetings to add, modify, or eliminate task statements. The analysts merged the individual inventories, resulting in a single job description inventory of more than 300 task statements covering all three career programs. The single LOGAMP task inventory was then distributed to all 10,000-plus job incumbents at Army installations throughout the world. Following receipt of completed inventories, CODAP analyses are to be conducted and pertinent task and duty clusters will be developed and validated by SMEs.

Development of the CODAP Inventory

CODAP was originally developed by the Air Force for occupational analysis purposes in the mid to late 1950s. CODAP includes a set of interrelated statistical programs used for the purpose of job analysis.

The primary focus of CODAP is the analysis of jobs, jobs being defined as a set of tasks selected from a standard inventory. The selection of tasks is performed by the job incumbent to reflect those tasks actually performed by him or her. In addition to identifying the tasks, the job incumbents are asked to categorize the relative time spent performing each task. When these "time spent" categories are assigned numerical weights and converted to percentages, individual job descriptions are produced. In this inventory we asked incumbents to rank both relative time spent (to other tasks) and importance to job on each task performed.

In our current CIVPERCEN project, we plan to analyze the data on the basis of empirical task/duty clusters, rather than on previously developed job series within the various career programs that are being reviewed. Furthermore, we have attempted to go beyond the definition of jobs defined merely by a time spent analysis and have included an importance to the job scale with each task statement. Additionally, because the types of equipment and commodities are thought by incumbents to be such a critical variable (in many cases) for selection and training of high level professionals and managers, we have added a separate section to the job description inventory to identify the equipment/commodities that differentiate various jobs at various levels of the organization. This additional section also allows us to greatly shorten the length of the inventory. For instance, rather than a separate task statement such as "develops long range budget for fixed wing aircraft," as well as a similar statement for each type of equipment covered in the career program(s), we merely listed each commodity and equipment type once and shortened the task statement to read "develops long range budget." As can be envisioned, this shortens the inventory from several thousand items to several hundred (349 task statements along with 88 commodities and equipment categories.)

Once the statistical clusters of tasks and duties are established through the various CODAP computer programs, selected SMEs will review the data and establish the task/duty clusters. Following the specification of task and duty clusters, SME panels will be formed for each job cluster to develop KSAs needed for training requirements and selection criteria.

The KSA Linkage Process

After CODAP job descriptions are generated for each job series, subject matter experts can then be formed to delineate the final job tasks for each series, rate the tasks for ACTEDS training purposes, specify the required KSAs, rate the KSAs for selection and training purposes, and link the final KSAs to their job tasks. This section of the paper describes and discusses this process on a step by step basis.

- STEP ONE: Identify Core and Supplemental Tasks

In the format used for this study, time spent on a task and ratings regarding its importance to overall job performance were merged as a single measure and entitled criticality. Two key measures used in determining a so-called core task were the percent of members (of the job series) performing the task and the average criticality rating.

Percent of members performing the task is the number of people in the job group who indicated that they perform the task divided by the total number of people in the job group. Average percent criticality by members performing is the sum of the criticality for individuals who perform the task divided by the number of individuals who perform the task (within a job group). A core task, or one that is definitely included in the final job description for the job series, was defined as "a task that is performed by at least 50% of the group members and/or contributes to 50% of cumulative criticality". Criticality is an equally weighted combination of relative time spent and relative importance.

In the first step in the SME linkage process, a full job description for the job series in question is given to the 5 SMEs that are gathered for the job series. Core Tasks are checked off (usually averaging 40 to 50 tasks per series) and the SMEs are asked to review the full job description and to discuss whether any additional or supplemental tasks should be added to the final job description for the overall series. Thus far, after completing about half of the 27 SME panels, we have found that approximately ten supplemental tasks per job series have been added.

- STEP TWO: Review and Rate Core and Supplemental Tasks

Once the core and supplemental task list is developed, the SMEs are asked to rate each task against three criteria. The first of the three scales asks "What is the lowest level at which all job incumbents must be able to perform this task at full performance level without assistance? Response options include:

1=Intern
2=Specialist/Journeyman
3=Non Supervisory Program Manager (Team Leader)
4=1st Line Supervisor
5=2nd Line Supervisor or Higher

Group consensus is used to arrive at SME agreement on this scale. On the other two scales, SMEs complete the ratings on their own, group consensus not being required. The second scale is as follows:

1.b How soon after entering the job designated in 1.a. must the incumbent be able to perform the task at full performance level without assistance?

1=Immediately upon job entry
2=Within 3 months after job entry
3=Between 3 months & 6 months after job entry
4=6 months to 12 months after job entry
5=More than 12 months after job entry

The third scale asks:

> What is the most feasible way to teach this task (consider resource constraints [e.g., funds, facilities, equipment, time])
>
> 1=No need to teach (i.e., no training required)
> 2=On-the-job (guidance & coaching by experienced worker)
> 3=Job aid (e.g., Standing Operating Procedure, step-by-step procedure)
> 4=Correspondence course (e.g., computerized instruction; programmed instruction)
> 5=Classroom

The first scale, specifying the level at which the task must be performed at a full performance level, allows trainers to specify a target population in terms of classification. The second scale, how soon after entering the job must the task be performed, allows the training staff to know when to schedule some form of training to master the task. The third scale, the most feasible way to teach this task, allows the training staff to develop appropriate learning methods to fully perform the task in question. With this information, the training staff is better prepared to specify training needs and training resources available to upgrade skills of Transportation, Supply and Materiel Maintenance Management careerists.

- STEP THREE: Specify Knowledges and Abilities to be Rated

The Army's training strategy places KSAs under their corresponding job tasks. Thus in order to adequately train a GS-12 in developing a materiel fielding plan the training staff needs to know which KSAs are required. From the perspective of referral and promotion, the KSAs must also be linked to the job tasks for validation purposes. Further the KSAs in ACCES (usually between 35 and 50) are the sources of rating applicants for positions. Thus whereas the job tasks have a secondary linkage role in ACCES they have a primary role in ACTEDS with the KSAs having a support role.

To begin the KSA rating process, a KSA list needs to be developed. As an initial step, the knowledge and ability list developed by key career managers in each of the career programs is passed out to SMEs. They review the list, item by item, and determine whether any additions, deletions or modifications are necessary to the initial list.

- STEP FOUR: Rate the KSAs

The fourth step is for the SMEs to rate the KSAs against the various criteria. The rating scales used are shown on the following page.

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Figure 8

Knowledge and Ability Rating Form

Name: _____

Rating Scales

Knowledges/Abilities	KA Code	1. How important is this knowledge or ability for effective overall job performance? 1=Unimportant 2=Minor Importance 3=Important 4=Very Important 5=Extremely Important	2. How important is possession of this knowledge/ability for distinguishing average from superior performance on the job? 1=Unimportant 2=Minor Importance 3=Important 4=Very Important 5=Extremely Important	3. When is the necessary proficiency in this knowledge or ability normally acquired? 1=prior to job entry 2=during a brief orientation period (2-3 months) after entering the job 3=three months or more after job entry

As indicated, the average SME group in this project usually arrives at between 35 nd 50 KSAs. It is noted to the SMEs that if the KSA is learned during a brief orientation period (2-3 months after entry to the job) that it is not appropriate as an ACCES selection/promotion criteria (under the Uniform Guidelines) but can be useful as an ACTEDS training component.

● STEP FIVE: Link the Knowledge or Ability to Tasks

The final step, linkage of KSAs to job tasks, is the most time consuming and onerous of the various tasks required of the SMEs during their three to four days of work. It is, however, vital for both ACCES and ACTEDS purposes. For ACCES, the Uniform Guidelines require that a content valid approach to selection provide an audit trail between job content, or tasks to be performed, with job requirements or KSAs. For ACTEDS, the CIVPERCEN training staff needs to know which KSAs are tied to which job tasks so that appropriate training content can be designed.

DISCUSSION

When CIVPERCEN training staff and their functional counterparts have appeared before budget boards defending their appropriation requests, they have been asked to show data defending those requests. One of the underlying needs for ACTEDS job analysis, is to provide the appropriate sequence and method for civilian logistics training. Another reason for the job analysis, however, is to provide the numbers needed to support progressive sequential training for the new civilian military technician and manager. Hopefully, this data will be useful in building a stronger and more logical Army civilian training structure.

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Figure 9

KA - Task Importance Rating Form

Name _____

How important is this knowledge or ability for effective performance of this task?
1 = Unimportant; 2 = Minor Importance; 3 = Important; 4 = Very Important; 5 = Extremely Important

Task Number	Knowledge/Ability												